

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An adjustable clamp assembly including:  
an elongated connection member having a longitudinal axis;  
a gear assembly including a rotatable first gear member having an axis of rotation substantially perpendicular to said longitudinal axis and a second gear member cooperatively engaged with the first gear member; and  
a first clamp member;  
wherein the elongated connection member, the gear assembly and the first clamp member are arranged such that rotation of the first gear member results in a linear motion of the first clamp member parallel to said longitudinal axis.
2. An adjustable clamp assembly according to claim 1 wherein the elongated connection member includes a cylindrical member having a threaded portion proximate an end thereof, and wherein the first clamp member is connectable to the cylindrical member by screw-thread engagement with said threaded portion such that rotation of the cylindrical member results in a linear motion of the clamp member parallel to the longitudinal axis of the cylindrical member in a direction depending upon the sense of the rotation.
3. An adjustable clamp assembly according to claim 2 wherein the second gear member is arranged to rotate about the longitudinal axis of the cylindrical member and is engaged with said cylindrical member such that rotation of the second gear member results in rotation of the cylindrical member.
4. An adjustable clamp assembly according to claim 3 wherein the second gear member is integral with the cylindrical member.
5. An adjustable clamp assembly according to claim 1 wherein the elongated connection member includes a cylindrical member having a threaded portion proximate an end thereof, and wherein the clamp assembly further includes a rotatable sleeve member arranged to rotate about the longitudinal axis of the cylindrical member and connectable thereto by screw-thread engagement with said threaded portion, said sleeve member being engaged with the first clamp

member such that rotation of the sleeve member results in a linear motion of the first clamp member parallel to the longitudinal axis of the cylindrical member in a direction depending upon the sense of the rotation.

6. An adjustable clamp assembly according to claim 5 wherein the second gear member is engaged with said sleeve member such that rotation of the second gear member results in rotation of the sleeve member.

7. An adjustable clamp assembly according to claim 6 wherein the second gear member is integral with the sleeve member.

8. An adjustable clamp assembly according to any one of the preceding claims wherein the first gear member is located in a bracket integral with the first clamp member.

9. An adjustable clamp assembly according to any one of the preceding claims and further including a second clamp member opposed to the first clamp member such that linear motion of the first clamp member parallel to the longitudinal axis causes the first and second clamp members to be drawn closer together or further apart depending upon the direction of said linear motion.

10. An adjustable clamp assembly according to claim 9 when dependent upon any one of claims 2 to 4 wherein the second clamp member is able to rotate freely about the longitudinal axis of the cylindrical member.

11. An adjustable clamp assembly according to claim 9 when dependent upon any one of claims 5 to 7 wherein the second clamp member is not able to rotate freely about the longitudinal axis of the cylindrical member.

12. An adjustable clamp assembly according to claim 10 or 11 wherein the second clamp member is located proximate an end of the cylindrical member opposed to said threaded end.

13. An adjustable clamp member according to claim 9 when dependent upon any one of claims 1 to 4 wherein the first gear member is located in a bracket integral with the second clamp member.
14. An adjustable clamp assembly according to any one of the preceding claims wherein the gear ratio between the first gear member and the second gear member is a reduction ratio.
15. An adjustable clamp assembly according to any one of the preceding claims wherein the first gear member includes a worm gear and the second gear member includes a worm wheel.
16. An adjustable clamp assembly according to any one of the preceding claims wherein the first gear member includes connecting means shaped to engage with a rotation mechanism to facilitate rotation of the first gear member.
17. An adjustable clamp assembly according to claim 16 wherein the connecting means includes a recess in an end face of the first gear member, said recess being shaped to engage with the head of a rotation mechanism to facilitate rotation of the first gear member.
18. An adjustable clamp assembly according to claim 17 wherein said rotation mechanism includes one of a flat head screwdriver, a Phillips head screwdriver and an Allen key.
19. An adjustable clamp assembly according to any one of the preceding claims and further including a retaining member for holding the clamp assembly in place within a recess during adjustment.
20. An adjustable clamp assembly according to claim 19 wherein the retaining member includes first and second opposing wedge members arranged adjacent to the elongated connection member, each of said wedge members including a wing portion associated with a resilient hinge portion biased such that a restoring

force is exerted by the wing portion against a compressive force applied thereto and substantially directed towards the elongated connection member.

21. An adjustable clamp assembly according to claim 19 or 20 wherein the retaining member is removably attached to the elongated connection member.

22. An adjustable clamp assembly according to any one of claims 19 to 21 wherein the retaining member is made of plastic.

23. An engagement assembly for use with an adjustable clamp assembly that includes a cylindrical connection member having a threaded portion, said engagement assembly including:

- a rotatable sleeve member having a central axis of rotation and being connectable to the cylindrical connection member by screw-thread engagement with said threaded portion;

- a clamp member; and

- a gear assembly including a rotatable first gear member and a second gear member cooperatively engaged with the first gear member;

wherein the gear assembly is engaged in use with the sleeve member such that rotation of the first gear member about an axis substantially perpendicular to the central axis of the sleeve member results in rotation of the sleeve member about the central axis, and the clamp member is engaged in use with the sleeve member such that linear motion of the sleeve member parallel to the central axis results in corresponding linear motion of the clamp member.

24. An engagement assembly according to claim 23 wherein the second gear member is fixed to the sleeve member such that rotation of the second gear member results in rotation of the sleeve member.

25. An engagement assembly according to claim 24 wherein the second gear member is integral with the sleeve member.

26. An adjustable clamp assembly substantially as herein described with reference to the accompanying drawings excluding Figure 1.

27. An engagement assembly substantially as herein described with reference to the accompanying drawings excluding Figure 1.